



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

JUN 04 1991

WBRD-50-390/91-22

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority)

Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - DEFICIENCIES WITH HEATING,
VENTILATING, AND AIR CONDITIONING (HVAC) DUCT SUPPORTS -
WBRD-50-390/91-22 - FINAL REPORT

The subject deficiency was initially reported to NRC Inspector K. Barr on May 3, 1991, in accordance with 10 CFR 50.55(e) as Significant Corrective Action Report (SCAR) WBN 870316 SCA.

WBN 870316 SCA represents the consolidation of numerous related HVAC discrepancies at WBN. This SCAR was initially reviewed for reportability in July 1988. It was determined not reportable based upon available information and the fact that identified discrepancies would not likely affect the ability of the subject supports to perform their intended design functions. However, an update of this reportability determination was required upon completion of the HVAC corrective action program walkdowns.

This update has recently been finalized. The enclosed 10 CFR 50.55(e) final report summarizes the results of this effort.

No new commitments are provided within this report.

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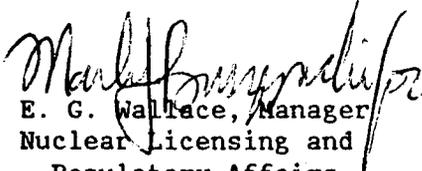
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If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


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Enclosure

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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1
DEFICIENCIES WITH HVAC DUCT SUPPORTS
SIGNIFICANT CORRECTIVE ACTION REPORT
(SCAR) WBN 870316 SCA
10 CFR 50.55(e)

FINAL REPORT

DESCRIPTION OF DEFICIENCY

Various discrepancies for heating, ventilating, and air conditioning (HVAC) duct supports were originally identified at WBN by the following documents:

- NRC Violation 390, 391/87-07-01
- Condition Adverse to Quality Reports WBN 870308 and WBN 870316
- Significant Condition Report W-580-PS
- Nonconformance Report W-580-P

In general, these documents identified specific construction discrepancies between the design records and installed configurations and between installed configurations and inspection documentation. Initial reviews concluded that these types of discrepancies were to be evaluated for widespread occurrence throughout the HVAC duct support population.

Examples of the discrepancies identified for some of the HVAC supports include:

- Excessive member lengths
- Excessive rivet spacings for duct-to-support connections
- Attachment of a conduit support to a duct support without supporting documentation
- Some support elements not installed as detailed by the drawings
- Excessive baseplate gaps
- Bent rods
- Loose nuts
- Edge distance of anchors on baseplates not as detailed on design documents
- Incorrect support identifications

Because of issue similarities, these deficiencies were consolidated under one SCAR for resolution (WBN 870316 SCA).

ROOT CAUSE

A root cause analysis performed for this condition determined that the problems were basically attributable to instructions which were ambiguous and did not provide sufficient step-by-step guidance. Also, the problems were attributed to carelessness and inattention to detail by the support inspectors.

SAFETY IMPLICATIONS

Some of the identified discrepancies will result in reduced design margins if left uncorrected. While the exceedance of these design allowables does not necessarily mean failure is likely, it cannot presently be concluded that none of the discrepancies would result in failure. An HVAC support failure could result in a breach of the duct pressure boundary and failure of the duct to perform its intended safety function.

CORRECTIVE ACTION

Engineering specifications for construction have been upgraded to provide improved clarity and guidance for the construction of HVAC duct supports. Specifically, general engineering specification G-89 has been upgraded, and site-specific engineering specification N3C-942 has been issued.

The types of discrepant conditions recorded in the SCAR are representative of a variety of construction discrepancies encompassed by the HVAC Corrective Action Program (CAP) Plan. In general, during implementation of the CAP, all Unit 1 and common safety-related duct supports will be reviewed by walkthroughs in accordance Technical Instruction (TI)-2010 for potentially significant configuration discrepancies. Walkdown data will also be obtained, as necessary, in accordance with TI-2012 for critical case evaluations. These evaluations serve as the basis for accept as-is or modify/fix dispositions for each Unit 1 and common safety-related duct support. Generic or specific designs will be generated to implement modifications for fixes as necessary. In particular, the specific supports identified with this SCAR will be reviewed for the conditions recorded (also for other critical attributes) and dispositioned case-by-case to accept as-is or modify/fix with supporting justification given.

The above commitments are captured generically by the CAP. Accordingly, no new actions are contained in this submittal.

Corrective actions will be completed concurrently with the CAP implementation schedule.

The HVAC CAP was formally submitted to the staff on November 18, 1988. NRC's programmatic acceptance was summarized in the safety evaluation dated October 24, 1989. Additionally, implementation audits of the CAP process have been initiated, as discussed in NRC Inspection Reports 50-390/89-14 and 50-391/89-14.